**K-5 Math Lesson Plan**

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| **Teacher: Flick** | | | **Grade: 3** | | | **Date(s)**: LP5 August 31, 2012 |
| **Unit Title: Unit 1 -** Place Value with Addition and Subtraction within 1,000 | | | | **Corresponding Unit Task:** Taught prior to Performance Task 1; ***This lesson will mainly focus on using what students already know about place value to compare and order whole numbers.*** | | |
| **Essential Question(s):**   * How does place value understanding help me add and subtract numbers? * Why do I need to know multiple strategies to add and subtract numbers? * What strategies can I use to add and subtract multi-digit numbers? | | | | | | |
| **Materials/Resources** | | | | **Essential Vocabulary** | | |
| **Teacher:**   * Elmo/projector * Calculator * enVisions TE Topic 1-6 * PSJ labels | | **Student:**   * Calculators per student * Interactive Recording Sheet 2 (enVisions), “Ordering Numbers” per student * Dice * Mini-white boards/markers * Game: “Order in the Courtroom!” (with number cards and spinner) * “Comparing Numbers to 999” and “Ordering Numbers to 999” worksheet per student * PSJ * Planner | | | **Supporting vocabulary:** digit, value, greatest, least  **Essential vocabulary:** place value, ones, tens, hundreds | |
| **Learning Experience** | | | | | | |
| **8 Mathematical Practices:**  √ 1. Make sense of problems and persevere in solving them.  √ 2. Reason abstractly and quantitatively.  √ 3. Construct viable arguments and critique the reasoning of others.  √ 4. Model with mathematics.  √ 5. Use appropriate tools strategically.  √ 6. Attend to precision.  √ 7. Look for and make use of structure.  √ 8. Look for and express regularity in repeated reasoning. | **Common Core State Standards: 3.NBT.1 *(correlates to NCSCOS objective 1.01)*** Use place value understanding to round whole numbers to the nearest 10 or 100. | | | | | |
| **I Can Statement(s):**   * I can put a list of whole numbers in order by using what I know about place value. | | | | | |
| **Activating Strategy/Hook:**  In the activator, students will review content taught in the previous lesson on how increasing or decreasing the value of a digit in a certain place changes the number (Comparing). Provide students with calculators. Give students the following instructions. (You may want to do the first one with the class using an overhead calculator or the Elmo.)  #1   * Punch the number 372 in your calculator. * Add 100. What changes? [The hundreds place increased] * Subtract 10. What changes? * Why didn’t all the numbers change?   #2   * Punch the number 4,537 in your calculator. * Add 20. What changes? By how much? * Subtract 1. What changes? By how much? * Add 300. What changes? By how much? * Subtract 2,000. What changes? By how much?   #3   * Punch the number 596 in your calculator. * What must you do to change the 5 to a 6? [Add 100.] * What must you do to change the 9 to a 4? [Subtract 50.] * What must you do to change the 6 to a 3? [Subtract 3.] * What must you do to have the number 1 in the thousands place? [Add 1,000.]   Students may put calculators away.  In this part of the activator, students are being introduced to ordering. Call 5 volunteers to the front of the room. Ask: *How might you order these students?* Allow student discussion and suggestion. Students may say: by height, by alphabetical order of first names, etc. | | | | | |
| **Teacher Directed:**  Say: *You know how to compare two numbers. Today, you will compare lists of numbers to write them in order from greatest to least or least to greatest.* Review supporting vocabulary terms: ***least*** and ***greatest***.  Write two 3-digit numbers on the board: 255 \_\_\_ 205. Think aloud: *I remember from yesterday that I have to look at the largest place first when I’m comparing numbers. That would be the hundreds place.* You may want to quickly jot a hundreds place value chart on the board, reviewing the strategy taught yesterday, modeling your thinking and showing your work. *So, both numbers have a 2 in the hundreds place. That means they both have 200, which is equal. I have to move to the tens place. The number 255 has a 5 in the tens place, that’s 50. The number 205 has a 0 in the tens place, so it has no tens. I know that 50 is greater than 0, so 255 is larger than 205.* Replace the line or bubble in between the numbers with a greater than sign.  Do another example with only two numbers if needed, if not add a third number. You may also choose to stick with three-digit numbers per the curriculum or you can challenge your students with four-digit numbers.  3,731 3,933 3,430  Model how to compare three numbers using the methods above. Then, model rewriting the numbers in order from least to greatest by first writing the numbers horizontally separated by less than signs. Then erase the less than signs and replace them with semi-colons or commons, noting that even though the less than sign is gone the list is still least to greatest.  3,430 ≤ 3,731 ≤ 3,933  3,430 ; 3,731 ; 3,933  Continue modeling examples as necessary. Additional problems can be found in enVisions TE Topic 1-6 pages 16-17. | | | | | |
| **Guided Practice:**  Provide students with Interactive Recording Sheet 2 (enVisions), “Ordering Numbers”. Working in cooperative pairs, instruct the students to read the three boxes on the top of the page. Then, tell them that they need to use the place value chart provided to compare the waterfall heights and to answer the tasks for number one. For the second place value chart, provide the cooperative pairs with two die. The students will roll the die to build three numbers to plug into the chart, compare them, and then order them. Partners should discuss the question below and then write their answer in complete sentences. (NOTE: On the bottom of the Interactive Recording Sheet before you run a class set of copies, you may want to add the following question.)  *Eric says that the middle number is the same when you order numbers from least to greatest and greatest to least. Is this always true?*  Break students into groups of 4. Depending on time, students can play both of the following games, or choose one.   * Play **Corn Shucks!** found in Math Toolbox. Students will need 3-4 number cubes, mini-white boards and dry erase markers. The first player tosses all three/four cubes and makes the largest number possible with those digits. The player writes the number at the bottom of the mini-white board. The next player tosses all the cubes and makes the smallest number possible. The player writes that number at the top of the mini-white board. The third player tosses all the cubes and must make a number between the other two. If the player cannot, he/she says “shucks!” and is out of the game. If the player can, he/she writes it in between the first and last numbers. The next player tosses all the cubes and must also make a number in between the first and last number. It should be written so that all the numbers on the white board are in order from the top to the bottom. If the player cannot make a number between the largest and smallest, or if he/she writes the number out of order he/she says “shucks!” and is out. The players continue taking turns until there is only one person left (the winner). * Play **Order in the Courtroom!** Found in Blackline Masters I-27 through I-30, and page 9 in Grade 3 Classroom Strategies section of the Math Toolbox. You will have to reproduce the number card deck and spinner. In turn, student spins the spinner and draws the appropriate amount of cards from the desk. The student then orders the cards (least to greatest) and the other players check the order. If they agree they say “Order in the Courtroom!”. The cards are returned to the deck, shuffled and the next player takes his/her turn. Points are awarded for each card ordering correctly in a successful turn. | | | | | |
| **Independent Practice:**  Students will return to their seats and independently complete “Comparing Numbers to 999” and “Ordering Numbers to 999” (found in enVisions Math Diagnosis and Intervention System pages 262 and 266) worksheet. They may use grid/graph paper and/or manipulatives if desired. | | | | | |
| **Closing/Summarizing Strategy:**  Review the lesson: Discuss the “I can” statement listed above. Have students discuss their feelings (Think-Pair-Share): *Can you? Why or why not? What do I need more practice on?* Students will write any questions or areas needing more assistance in the “parking lot”.  Assign homework: Problem Solving Journal (PSJ) problem:  *A mail carrier dropped his mail bag and the mail he was delivering got all mixed up. Help him to put the addresses in order.*  853 Jefferson Rd.  964 Jefferson Rd.  1097 Jefferson Rd.  946 Jefferson Rd.   * *List the addresses in order from least to greatest.* * *Write a mathematical sentence comparing two addresses.* | | | | | |
| **Differentiation Strategies** | | | | | | |
| **Extension** | | | **Intervention** | | | **Language Development** |
| Add greater numbers for students to order. Also, these students can order lists of 4, 5, and 6 numbers. | | | Begin by ordering one-digit numbers, then move to two-digit, and then three-digit. Provide hundreds boards and number lines. | | | Begin by ordering one-digit numbers, then move to two-digit, and then three-digit. Provide hundreds boards and number lines. |
| **Assessment(s):**   * PSJ work from last night’s homework. * Visual assessments on-going throughout the lesson. * Work from guided and independent practice. * Student self -assessment of the lesson and feedback in the parking lot. | | | | | | |
| **Teacher Reflection:** (Next steps?) | | | | | | |